

) \	1/	27.	(Amended Once) A method for performing a handover procedure for
<u>`</u> ر	2		a mobile station (MS) communicating in a communication network and being
	3	moval	ple therein,
	4		said communication network comprising
	5		a plurality of base transceiver stations being adapted to perform a
	6	comm	unication with said mobile station (MS) within its coverage area,
	7	said m	nethod comprising the steps of
	8		processing (S3) location information related to the mobile station (MS) by
	9	compa	aring it with position information related to the base transceiver stations (BTS 1A
1	0	BTS 1	B, BTS 2, BTS 3),
1	1		deciding (S4) on the basis of the result of said processing (S3), whether a first
1	2	hando	ver condition based on location information is fulfilled or not, when the first
1	3	hando	ver condition is not fulfilled, checking (S5) subscriber specifications, whether or
1	4	not and	other measurement related to a handover is to be performed, wherein said
1	5	anothe	er measurement results in a determination of a second handover condition,
1	6		designating (S9) a next base transceiver station in said communication network
1	7	to whic	th the communication with said mobile station (MS) is to be directed from a
1	8	current	base transceiver station, when the first handover or the second handover
19	9	conditio	on is fulfilled, /
2	0	1	triggering a handover (S10) of the communication connection of the mobile
2	1	station	(MS) from the current base transceiver station to the next base transceiver
22	2	station	designated in said designating step (S10), and

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performing (S11) the handover.

- 1 28. (Unchanged) A method according to claim 27, wherein
- in said processing step (S3) at least one additional parameter is processed
- together with said location information related to the mobile station (MS) and position
- 4 information related to the base transceiver stations (BTS 1A, BTS 1B, BTS 2, BTS 3).
- 1 29. (Unchanged) A method according to claim 28, wherein
- said additional parameter is based on a signal quality.
- 1 30. (Unchanged) A method according to claim 27, further comprising a location
- 2 information obtaining step (S2) comprising
- a step of determining said location information related to the mobile station
- 4 (MS) and
- a step of transmitting said determined location information to a respective
- 6 network device (BSC, MSC) adapted to perform said processing step (S3).
- 1 31. (Unchanged) A method according to claim 30, wherein said step of determining
- said location information related to the mobile station (MS) is executed in the mobile
- 3 station (MS).
- 1 32. (Unchanged) A method according to claim 30, wherein said step of determining
- 2 said location information related to the mobile station (MS) is executed in a network
- 3 element on the network infrastructure side.

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- 1 33. (Unchanged) A method according to claim 30, wherein said step of determining
- said location information related to the mobile station (MS) is based on at least one of
- 3 the following methods:
- 4 locating by a global positioning system;
- 5 locating by a time of arrival;
- 6 locating by an observed time difference.
- 1 34. (Unchanged) A method according to claim 30, wherein said location information
- 2 obtaining step (S2) is executed periodically.
- 1 35. (Unchanged) A method according to claim 30, wherein said location obtaining
- step (S2) is executed upon predetermined occasions.
- 1 36. (Unchanged) A method according to claim 35, wherein said predetermined
- 2 occasion is a attachment procedure of the mobile station (MS) to the communication
- 3 network.

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- 1 37. (Unchanged) A method according to claim 27, wherein,
- if the first handover condition is not fulfilled, on the basis of the checking of the
- 3 subscriber specifications,
- 4 the method further comprises the steps of
- 5 checking (S5), whether a further measurement is to be performed,
- selecting (S6) a type of further measurement, if a measurement is to be
- 7 performed,
- executing (S7) the measurement selected in said selecting step (S6),
- 9 verifying (S8), whether a measurement result represents a second handover
- 10 condition, and
- if the result of said verifying step (S8) represents the second handover
- condition, initiating execution of said target cell designation step (S9) for performing
- 13 the handover (S10, S11).
- I 38. (Unchanged) A method according to claim 27, wherein the coverage area of the
- 2 base transceiver station designated in said designating step (S9) and to which the
- 3 communication connection is to be directed (S10) is a coverage area adjacent to the
- 4 coverage area of the current base transceiver station.
- 1 39. (Unchanged) A method according to claim 27, wherein the coverage area of the
- 2 base transceiver station designated in said designating step (S9) and to which the
- 3 communication connection is to be directed (S10) is a coverage area not adjacent to
- 4 the coverage area of the current base transceiver station.

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- 1 40. (Unchanged) A method according to claim 39, wherein the coverage area not
- 2 adjacent to the coverage area of the current base transceiver station to which the
- 3 communication connection is to be directed (S10) is known to the communication
- 4 network.
- 1 41. (Unchanged) A method according to claim 40, wherein the base transceiver
- station (BTS) with the coverage area not adjacent to the coverage area of the current
- 3 base transceiver station, to which the communication connection is to be directed
- 4 (S10), is a predetermined base transceiver station (BTS).
- 1 42. (Unchanged) A method according to claim 41, wherein the position information
- of the predetermined base transceiver station (BTS) is stored in a subscriber identity
- module (SIM) or in the mobile station (MS).

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43. (Amended Once) A device for controlling a handover procedure for

a mobile station (MS) communicating in a communication network and being

3 movable therein,

said communication network comprising

a plurality of base transceiver stations being adapted to perform a

6 communication with said mobile station (MS) within its coverage area,

7 said device comprising

a processing means (2) for processing location information related to said

9 mobile station (MS) by comparing it with position information related to base

transceiver stations (BTS), and for deciding on the basis of the result of said

processing, whether a first handover condition based on location information is fulfilled

or not, for checking, when the first handover condition is not fulfilled, subscriber

13 specifications, whether or not another measurement related to a handover is to be

performed, wherein said another/measurement results in a determination of a second

handover condition, and for designating a next base transceiver station in said

communication network, to which the communication with said mobile station (MS) is

to be directed from a current base transceiver station, when the first handover

condition or the second handover condition is fulfilled, and

a triggering means (5) for triggering a handover of the communication

20 connection of the mobile station (MS) from the current base transceiver station to the

next base transcelver station designated by said designating means (4).



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- 1 44. (Unchanged) A device according to claim 43, wherein
- in said processing means (2) at least one additional parameter is processed
- together with said location information related to the mobile station (MS) and position
- 4 information related to the base transceiver stations (BTS 1A, BTS 1B, BTS 2, BTS 3).
- 1 45. (Unchanged) A device according to claim 44, wherein
- said additional parameter is based on a signal quality.
- 1 46. (Unchanged) A device according to claim 43, further comprising means (1)
- for determining location information related to the mobile station (MS) and
- for transmitting said determined location information to a respective network
- 4 device (BSC, MSC) performing said processing.
- 1 47. (Unchanged) A device according to claim 46, further comprising a memory
- 2 means (3) for memorizing location information related to the mobile station (MS) and
- position information related to the base transceiver stations (BTS).
- 1 48. (Unchanged) A device according to claim 46, wherein said means (1) for
- determining location information related to the mobile station (MS) and for transmitting
- said determined location information to a respective network device (BSC, MSC)
- 4 performing said processing are located in the mobile station (MS).

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- 1 49. (Unchanged) A device according to claim 46, wherein said means (1) for
- 2 determining location information related to the mobile station (MS) and for transmitting
- 3 said determined location information to a respective network device (BSC, MSC)
- 4 performing said processing are located in a network element on the network
- 5 infrastructure side.
- 1 50. (Unchanged) A device according to claim 46, wherein said means (1) for
- 2 determining the location information related to the mobile station (MS) is adapted to
- 3 perform said determination according to at least one of the following methods:
- 4 locating by a global positioning system;
- 5 locating by a time of arrival;
- 6 locating by an observed time difference.
- 1 51. (Unchanged) A device according to claim 43, further comprising a
- 2 measurement means (6) being responsive to the subscriber specifications and
- 3 adapted to
- 4 check, whether a further measurement is to be performed,
- select a type of further measurement, if a measurement is to be performed,
- 6 execute the selected measurement,
- verify, whether a measurement result represents a second handover condition,
- 8 · and
- 9 if said second handover condition is verified, forwarding the
- 10 measurement result to said handover condition processing means (2) for performing
- 11 the handover.

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